NCERT Solution

Electricity and Circuits Exercise

1. Fill in the blanks:

(a) A device that is used to break and electrics circuit is called ______

(b) An electric cell has _____ terminals.

Answer:

(a) A device that is used to break and electrics circuit is called <u>switch</u>.

(b) An electric cell has two terminals.

2. Mark 'True' or 'False' for the following statements.

- (a) Electric Circuit can flow through metals.
- (b) Instead of metal wires, a jute sting can be use to make a circuit.
- (c) Electric current can pass through a sheet of thermacol.

Answer:

- (a) Electric Circuit can flow through metals.
 (b) Instead of metal wires, a jute sting can be use to make a circuit.
 (c) Electric current can pass through a sheet of thermacol.
 (False)
- 3. Explain why the bulb would not glow in the arrangement show in fig 12.13.



Answer:

The bulb will not glow because the circuit is disconnected due to presence of an insulator in between.



4. Complete the drawing show in fig12.14 to indicate where the free ends of the two wires should be joined to make the bulb glow.



Fig. 12.14

Answer:

The given circuit is not complete. To complete this circuit, the positive terminal of the cell should be connected to one end of the switch, and the other terminal of the bulb should be connected to the other end of the switch. Closed circuit is shown as following figure:



5. What is the purpose of using an electric switch? Name some electric gadgets that have switches built into them.

Answer.

Switch is a simple device that is used to either break the electric circuit or to complete it. If the switch is 'ON', then a current can flow through the circuit. However, if the switch is 'OF', then a current cannot flow through the circuit



Electric gadgets that have switches built into them are: microwaves, freezes, rice cooker, washing machine, electric irons, TV, radio etc.

6. Would the bulb glow after completing the circuit shown in fig12.14 in Q4 if instead of safety pin we use an eraser?

Answer:

'No'. Eraser is bad conductor of electricity. They don not conduct electricity. The circuit becomes an open circuit. Hence, bulb will not glow if a safety pin is replaced by an eraser.

7. Would the bulb glow in the circuit show in fig12.15.



Answer:

No. Bulb will not glow. This is because of the two terminals of cell are connected to the single terminal of the bulb.

8. Using the "conduction tester" an object it was found that the bulb begins to glow. Is that object a conductor or an insulator? Explain.

Answer:

When the two free ends of the conductor tester are touched with an object, then bulb of tester would glow if the object conducts electricity. However, the bulb would not glow if the object does not conduct electricity. Since, the bulb glows when tester is touched with the object. Hence, the object is a conductor.

9. Why should an electrician use rubber gloves while rearing an electric switch at your home?

Answer: The rubber gloves are insulators. This saves electrician from getting shock. That is why an electrician uses gloves, while rearing an electric switch.

10. The handles of tools like screwdrivers and pliers used by electrician for repair work usually have plastic or rubber covers on them. Can you explain why? Answer:

Plastic and rubber, both is bad conductor of electricity. Hence, they protect against electric shock.

